

Serial No.: 10/678,035
Group Art Unit 3752
Examiner Steven J. Ganey

IN THE CLAIMS

1 – 36. (Canceled).

37. (Previously Presented) A method of fragmenting an object in a patient's body comprising:

injecting a first material in a flowable form into the patient's body to contact an object;

forming a gel by allowing the first material to contact a second material in the patient's body;

stabilizing the object in the patient's body by enabling the gel to contact the object;

applying energy from outside of the patient's body directed towards the object, the energy breaking the object into at least two fragments;

dissolving the gel by contacting the gel with a third material that includes a de-crosslinking agent comprising one or more of sodium phosphate, sodium citrate, inorganic sulfates, ethylene diamine tetraacetic acid and ethylene dime tetraacetate, organic phosphates (e.g., cellulose phosphate), inorganic phosphates (e.g., pentasodium tripolyphosphate, mono- and di-basic potassium phosphate, sodium pyrophosphate), phosphoric acid, trisodium carboxymethyloxy succinate, nitrilotriacetic acid, maleic acid, oxalate, polyacrylic acid, sodium, potassium, calcium, or magnesium ions.

38. (Previously Presented) A method of stabilizing and eliminating an object in the body of a patient, comprising:

injecting a lower critical solution temperature material in a flowable form into the body of the patient to contact the object; wherein the lower critical solution temperature material is cooled to a temperature below ambient air temperature prior to injection;

allowing the lower critical solution temperature material to form a gel in the body such that the object is contained at least partially within the gel and thereby stabilized by the gel, the material existing as the gel at temperatures about at and above a temperature inside the body of the patient;

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retrieving, breaking, or otherwise eliminating the object from the body.

39. (Previously Presented) The method of claim 38, wherein the lower critical solution temperature material is a carrier for delivery of a therapeutic agent inside the body.

40. (Previously Presented) The method of claim 39, wherein the therapeutic agent comprises a cancer-treating agent comprising an endostatin.

41. (Previously Presented) The method of claim 38, further comprising the step of:
introducing a cooled fluid having a temperature of from -10°C to 20°C into the body to facilitate breakdown of the lower critical solution temperature material in the body.

42. (Previously Presented) The method of claim 41, wherein the cooled fluid comprises a physiologically acceptable liquid comprising water, saline, contrast media, or fluid having a temperature below the lower critical solution temperature of the lower critical solution temperature material.

43. (Previously Presented) A method for stabilizing an object in a patient's body comprising:
injecting a first material comprising a crosslinkable polymer in a flowable form into the patient's body to contact an object;
contacting the first material with a second material comprising a crosslinking agent, the first material and second material, upon contact, forming a gel in the patient's body, wherein the crosslinking agent comprises polymers comprising covalent bonds that are hydrolysable at temperature and pH conditions inside the body; and
stabilizing the object in the patient's body by enabling the gel to contact the object.

44. (Previously Presented) The method of claim 43, wherein the crosslinking agent comprises a polyfunctional covalent crosslinking agent comprising polyfunctional

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aziridines, polyfunctional carbodiimides, polyisocyanate, glutaraldehyde, or polyfunctional crosslinkers having functional groups capable of reacting with organic acid groups, or activated forms thereof.

45. (Previously Presented) The method of claim 43, wherein the crosslinkable polymer is an ionically crosslinkable polymer.

46. (Previously Presented) The method of claim 43, wherein the crosslinkable polymer is an ionically crosslinkable polymer comprising alginate.

47. (Previously Presented) The method of claim 43, wherein the second material comprises a crosslinking agent present in concentrations of from about 0.0001 M to about 10 M.

48. (Previously Presented) The method of claim 43, wherein the first material comprises a crosslinkable polymer present in concentration of from about 0.0001 M to about 10 M.

49. (Previously Presented) A system for stabilizing an object in a patient's body comprising:

- a first material comprising a crosslinkable polymer in a flowable form;
- a second material comprising a crosslinking agent, such that the first material and second material, upon contact, form a gel in the patient's body, wherein the crosslinking agent comprises polymers comprising covalent bonds that are hydrolysable at temperature and pH conditions inside the body;
- a catheter for transferring the first material and second material into the patient's body in flowable form, such that the gel formed by the first material and second material contacts and thereby stabilizes the object; and
- a guide wire for introducing and guiding the catheter into the patient's body.

50. (Previously Presented) The method of claim 43, wherein the crosslinking agent comprises a polyfunctional covalent crosslinking agent comprising polyfunctional

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aziridines, polyfunctional carbodiimides, polyisocyanate, glutaraldehyde, or polyfunctional crosslinkers having functional groups capable of reacting with organic acid groups, or activated forms thereof.

51. (Previously Presented) The method of claim 43, wherein the crosslinkable polymer is an ionically crosslinkable polymer.

52. (Previously Presented) The method of claim 43, wherein the crosslinkable polymer is an ionically crosslinkable polymer comprising alginate.

53. (Previously Presented) The method of claim 43, wherein the second material comprises a crosslinking agent present in concentrations of from about 0.0001 M to about 10 M.

54. (Previously Presented) The method of claim 43, wherein the first material comprises a crosslinkable polymer present in concentration of from about 0.0001 M to about 10 M.

55. (Previously Presented) A system for stabilizing an object in a patient's body comprising:

- a first material comprising a crosslinkable polymer in a flowable form;
- a second material comprising a crosslinking agent, such that the first material and second material, upon contact, form a gel in the patient's body, wherein the crosslinking agent comprises polymers comprising covalent bonds that are hydrolysable at temperature and pH conditions inside the body;

- a percutaneous access device for injecting the first material and second material into the patient's body in flowable form, such that the gel formed by the first material and second material contacts and thereby stabilizes the object.

56. (Previously Presented) The system of claim 55, wherein the crosslinking agent comprises a polyfunctional covalent crosslinking agent comprising polyfunctional aziridines, polyfunctional carbodiimides, polyisocyanate, glutaraldehyde, or

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polyfunctional crosslinkers having functional groups capable of reacting with organic acid groups, or activated forms thereof.

57. (Previously Presented) The system of claim 55, wherein the crosslinkable polymer is an ionically crosslinkable polymer.

58. (Previously Presented) The system of claim 55, wherein the crosslinkable polymer is an ionically crosslinkable polymer comprising alginate.

59. (Previously Presented) The system of claim 55, wherein the second material comprises a crosslinking agent present in concentrations of from about 0.0001 M to about 10 M.

60. (Previously Presented) The system of claim 55, wherein the first material comprises a crosslinkable polymer present in concentration of from about 0.0001 M to about 10 M.